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Lüken-Klaßen, Doris; Kötting, Jan-Hendrik

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Nudging digitalisation: innovative methods to stimulate digital adult education

Doris Lüken-Klaßen and Jan-Hendrik Kötting

State Institute for Family Research at the University of Bamberg (ifb), Bamberg, Germany

ABSTRACT

The COVID-19 pandemic has changed the didactic landscape of adult education. To meet clients' ongoing demand for support, adult educators had to expand their didactic toolkit and enhance digital literacy. Relying on data gathered during a training series on digital adult education, this paper will examine the following questions: (1) How did adult educators manage to adopt digital methods despite pressing issues and hurdles in regards to the change? (2) Which conditions support efficient training of adult educators, aiming at 'nudging' digitalisation in adult education for families? To gain insight into this didactic transformation, we systematically analyse both quantitative and qualitative data collected during a training series fostering digital literacy such as technology handling, online counselling and the usage of social media. These events attracted 1,250 participants that specialise in parenting programmes, family counselling and institutionalised family welfare. Findings include how practitioners with different backgrounds and levels of digital skills assess different methods and didactic choices. Further, we will examine how providing accessible and applicable information can act as a nudge to spark intrinsic motivation for further learning and as a starting point for new ideas.

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Introduction

The onset of the COVID-19 pandemic in the beginning of 2020 challenged learners and adult educators alike, since both the needs of the clients and the ways in which adult educators could interact and work with the clients suddenly changed significantly. This is particularly true for the field of adult education on family-related issues. Family-oriented adult education generally has a specific focus on parents, mainly on parents of babies and toddlers. It generally takes place in group settings on-site, since it fosters peer learning and greatly benefits from intimate and direct personal exchange. This kind of adult education aims at supporting parents by preventing problems before they arise, and thus at protecting the well-being of children. Therefore, it plays an important individual and societal role. However, while parents especially have suffered under the pandemic, political measures such as lockdown and contact reduction made it impossible to implement the conventional methods of adult education for parents.

Despite their yet untested efficacy compared to traditional methods of education, the restrictions imposed by the pandemic increased the necessity for distance learning models, since educational facilities were forced to choose between the provision of digital educational offers and the provision

CONTACT Doris Lüken-Klaßen  doris.lueken-klassen@uni-bamberg.de  Staatsinstitut für Familienforschung an der Universität Bamberg, Heinrichsdamm 4, Bamberg 96047, Germany

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of none. This choice required adult educators to familiarise themselves with the usage of digital media for the purpose of education, which could also lead to a more widespread adoption and recognition of its potential benefits (Schmidt-Hertha, 2021).

Adult educators are regularly tasked with anticipating and analysing the needs of their clients and planning courses and programmes accordingly, and thereby, they have to factor in current events, crises and changes, such as the ongoing process of digitalisation, to provide suitable services (Freide et al., 2021; Schmidt-Hertha, 2020). Still, the COVID-19 pandemic was particularly challenging. For many adult education facilities, the efforts to provide their offers under these circumstances took a great toll on their organisational, personal, and financial resources (Christ et al., 2021).

To stimulate this digitalisation process we have designed a digital training series on digital education and counselling, which started in November 2020 and was attended by 1,250 adult educators from different sectors of parenting education (Lüken-Klassen & Neumann, 2021). Based on this training series, we analyse the following research questions: (1) How did adult educators manage to adopt digital methods despite pressing issues and hurdles in regards to the change? (2) Which conditions support efficient training of adult educators, in order to 'nudge' digitalisation in adult education? By adopting a mixed-methods approach, we gathered and analysed qualitative and quantitative data on how to 'nudge' digitalisation processes in adult education.

Theoretical background

First, we will describe the aim and typical methods of adult education for parents and reflect on the need of digitalisation of this particular field in times of crisis. We discuss the advantages of digital learning formats, the requirements for their successful implementation and possible drawbacks. Second, we present the concept of 'nudging' as a potential way to support digitalisation efforts and its further applications in the field of education and training.

Digitalisation of adult education for parents in times of crises

Adult education is a multilayered field with manifold tasks, target groups and objectives. One part of adult education is the field of parenting education, which aims to train parents on educational and family-related issues, often within the framework of child and youth welfare (Iller, 2017). In this context, adult education aims to support parents and young adults to cope with their everyday family life and carry out educational tasks. By doing so, the educational measures also aim to prevent problems from arising or, if they do arise, to tackle them before the situation deteriorates. They include universal primary prevention measures (e.g. parenting classes or low-threshold peer learning such as drop-in parents' breakfasts with discussion of health issues), selective secondary prevention (e.g. antenatal classes for refugee women), and also indicated tertiary prevention, or early intervention, to support vulnerable parents with a diagnosed problem (e.g. visiting programmes or counselling for mentally ill fathers) (Caplan, 1964; Munoz et al., 1996). All these different preventive and interventionist measures of adult education and counselling teach everyday skills, strengthen family resources, and provide opportunity structures for information and reflection, for exchange and networking in order to help families to help themselves (Arnold & Macsenaere, 2018; Bunn et al., 2022; Kane et al., 2007; Rupp et al., 2010; Schneewind & Berkič, 2007; Weiss et al., 2015). In summary, parenting education is an important part of adult education.

Following the outbreak of Covid-19, however, the adult education facilities had to reduce or restructure their offerings to meet the new needs of parents and comply with the official regulations aimed at containing the pandemic. In 2020, some facilities even had to close down completely. In addition, some staff members were themselves affected by problems of work-life compatibility due to the closure of day care centres and schools. As a result, the facilities lost several sources of income, and some feared insolvency (Lüken-Klassen et al., 2020). Thus, the adult education within

the child and youth welfare system faced massive challenges in adapting to changed conditions, in terms of both structure and content, and could not operate as per usual (Buschle & Meyer, 2020; Cohen et al., 2020; Flammang & Böwen, 2020; Mairhofer et al., 2020; Müller-Giebeler, 2020).

While the support measures were cut back, some clients would have needed the support more than before, since the pandemic and pandemic-related policies strongly affected family life (Andresen et al., 2020; Elsas et al., 2024; Hipp & Bünning, 2021; Holiugue et al., 2020; Huebener et al., 2020; Lüken-Klaßen et al., 2020, 2022; Müller-Giebeler, 2020; Zoch et al., 2020), and ‘generic’ COVID-19 policies focused on physical and economic harm, but often neglected human and social capital such as family resilience and functioning (Shek et al., 2023). In order to be able to conduct adult education with parents despite the adverse conditions, first institutions installed exploratory digital services such as online courses as early as in spring 2020. Those few who had implemented these services, often reported to have had such good experiences that they plan to continue them even after the pandemic. Numerous obstacles, especially the lack of knowledge and experience with digital methods, however, seemed to hinder digitalisation effort (Lüken-Klaßen et al., 2022). To manage this, adult education institutions need infrastructural development in regards to available media devices and internet connection, but also further qualifications for their educational staff to use said devices appropriately, which then enables the use of new didactic methods (Kühn & Robak, 2021).

While the digitalisation efforts of parenting education institutions were mostly driven by necessity, digitalisation can be a tool to make education more accessible to all clients, including those who have previously faced barriers in learning. Digitalised learning resources can be used from anywhere, provided the client has an appropriate device and a sufficient internet connection. This move towards informal learning is particularly helpful in the field of parenting education since parents can reduce the travel times to the educational facilities, saving time and money. The time saved is particularly valuable for those parents who work during a many of the facilities’ opening hours and therefore would not be able to attend the events in person. By enabling the parents to access the educational content from home, they can learn, interact with other parents, and attend counselling sessions while still caring for their children, who otherwise might require a childminder for the duration of the events. Thus, digitalised learning resources can be a way to make parenting education more accessible to target groups such as single parents and fathers, and can open up previously unavailable opportunities for collaborative learning (Kilis, 2013; Weinhandl & Ziesel, 2023). Digital technology allows clients to receive counselling at home and therefore in a safe space and a place of trust. Some clients and social workers preferred this mode of communication and the building of digital intimacy compared to traditional methods. In addition, digital counselling can be integrated with face-to-face meetings, resulting in a hybrid approach that proved to be successful in reaching families who were reluctant to engage with social workers (Pink et al., 2022).

Another advantage of digital learning, compared to face-to-face learning, is that it can be asynchronous and at the pace of the learner, and thus supporting individualised learning (Kilis, 2013). For example, in the case of a recorded lecture, a section that is difficult to understand can be replayed or slowed down and can be supplemented or cross-referenced with additional learning resources to aid comprehension. Overall, the potential and effectiveness of digital learning seems to be growing as technology and theory develops: by integrating intelligent technology into teaching and learning theories, ‘adaptive learning’ systems propose an autonomous, intelligent, and individualised approach to learning (Li et al., 2021).

While digital learning methods offer many benefits, they also can interfere with learning. Fundamentally, the learners need to have the necessary digital competence to interact with the digital learning resources, which can be challenging as many adult learners may lack the skills required to take advantage of digital learning platforms (OECD, 2015). The concept of digital competence combines knowledge, skills and attitudes in five areas: information and data literacy, communication and collaboration, digital content creation, safety and problem solving (Vuorikari et al., 2022). Beyond, adult educators need specific skills to provide effective digital learning

resources, in particular media-related field competence, media-related attitudes and self-regulation, sub-specific media-related competence, and media didactic competence (Schmidt-Hertha et al., 2017). Meeting these criteria can be challenging for some, and others even reject the use of digital media in teaching outright (Rohs et al., 2019; Taylor, 2017). Attitudes towards the use of digital media are positively influenced by educational background, employment context, age and further training in the use of digital media; an open attitude towards the use of digital media can lead to a higher degree of utilisation of digital media in adult education (Rohs et al., 2020).

Aside from barriers related to access and digital competence, educators need to consider that the devices used for digital learning are often used for other activities as well, such as browsing the Internet, playing games or working, which can be distracting and lead to a loss of attention. Therefore, digital learning resources should include collaboration and interactivity to keep the learner's attention (Kilis, 2013).

The pandemic provided an environment in which adult educators had to rapidly test new ideas and iterate in order to continue to reach and support their clients. Therefore, they had to invest in digital, social, and emotional skills, as well as bolster their adaptability and resilience. As a result, the aforementioned skills required by and acquired during the pandemic can in turn strengthen adult educators against future disruptions (Agrawal et al., 2020).

Nudging towards intrinsic learning

As noted, the pandemic acted as an exogenous push towards digitalisation. Despite a lack of profound digital literacy, and lack of formal training in digital methods, many educators implemented ad hoc formats out of necessity (Cook et al., 2020; Schmidt-Hertha, 2021). In the field of parenting education, many educators are employed part-time or work on a freelance basis (Fischer, 2022). Therefore, they oftentimes do not have the time and financial resources to participate in the necessary training to properly implement digital methods, despite the benefits mentioned above. One possible way to enable educators to provide digital learning to their clients could be to 'nudge' and thereby motivate and empower them towards individualised digital learning that can be delivered asynchronously and at a time congruent with the educator's busy schedule, potentially alleviating time constraints.

The concept of 'nudging' encompasses any intervention that aim to alter 'people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid' (Thaler & Sunstein, 2008, p. 6). Nudging tends to be particularly effective when used to promote achievements and behaviours that are congruent with a person's self-proclaimed goals. This is especially true when it can be used to overcome subconscious behavioural barriers that have previously hindered a person from achieving said goals. These behavioural barriers consist of latent cognitive boundaries, biases and rules of thumb, often characterised and generated by a lack of rationality. Instead of trying to combat the behavioural barriers, nudges make use of this lack of rationality in relation to the perceived barriers to guide people towards decisions and behaviours that help them achieve a predefined goal. Therefore, nudging interventions are used to support learners in the achievement of their educational goals and are found to have positive effects: text reminders sent to parents three times a week served as nudging interventions that led to an increase in students' literary activities. Another application of nudging in education was to ask students to set task-specific goals for a course, thereby nudging them to take more practice exams. Furthermore, dropout rates were significantly reduced by sending a weekly one-sentence message from the teacher to the parents about the students' performance (Weijers et al., 2021). Neergaard et al. (2021) propose 'pedagogical nudging' as a method that uses reflection and role taking, to transform students' dispositions and thereby increase their self-perceived fit for a new professional role.

As an alternative to traditional nudging interventions, the boost approach offers a different way to construct target-oriented nudging interventions. Whereas Thaler and Sunstein's nudge approach

assumes 'somewhat mindless, passive decision makers' (ibid 2008, p. 37), the boost approach strives to enhance the already existing competence of the decision makers by providing ways to enrich or streamline their skills and decision tools or by restructuring the decision environment. For an intervention to be considered a boost intervention, it needs to not just provide knowledge or information but also match them to the cognitive algorithms of the human mind. By doing so, boost interventions use the decision environment as a didactic tool to improve insight and decision-making skills (Grüne-Yanoff & Hertwig, 2016).

As outlined above, in the field of education and training, nudging interventions are widely used, both consciously and unconsciously. Nonetheless, empirical studies analysing its effectiveness show ambivalent results. While many nudging approaches remain controversial, there is evidence that 'high-touch nudges', such as proactive offers of support, coaching and encouragement, increase educational attainment, persistence, and subjective well-being. These high-touch nudges typically require face-to-face interactions in person, which increases the cost of implementation and thus decreases potential scalability. However, this downside can be mitigated by new technologies that enable virtual social interactions (Oreopoulos, 2020).

Recent analyses of didactic designs and principles, especially for online and blended learning, show the importance of incorporating interactions and learning tasks into the didactic environment. Especially the principles of providing a stimulating environment, social presence of the instructors, timely feedback and a clear structure and appropriate guidance were found to be conducive for increasing learning outcomes and understanding. Thus, (digital) learning needs to be more than just a collection of resources and information in order to enable the learners to transfer the acquired knowledge and utilise it in real and new situations (Müller et al., 2022). This can be achieved by incorporating learning activities that elevate the learning experience from a passive reception of information to an active participation in the learning process. Based on the ICAP model (Interactive, Constructive, Active, Passive), as described by Chi & Wylie, said learning activities can include the manipulation of received information, like taking notes or highlighting key aspects, the generation of independent explanations, follow-up questions or comments and dialoguing, like debating or discussing the information with peers (Chi & Wylie, 2014; Müller et al., 2022).

Methodology and data

To both analyse the current situation and stimulate the digitalisation in adult education in order to support adult educators in reaching their clients during the pandemic according to the theoretical framework outlined above, we have designed and offered digital trainings on adult education in times of crises, together with experienced trainers. Accompanying these trainings, we adopted a mixed-methods approach to gather and analyse qualitative and quantitative data on digitalisation of adult education.

Digital trainings

We designed a training series comprising 31 sessions on digital education and counselling that were held between November 2020 and March 2021 (Lüken-Klaßen & Neumann, 2021) and organised a digital conference for adult educators on health issues in July 2021 (Neumann et al., 2021; Lüken-Klaßen & Kötting, 2023). All trainings were accessible for adult educators working in the field of family education in Bavaria and could be offered free of charge since the Bavarian State Ministry of Family, Labour and Social Affairs financed the external trainers. In the course of this series of 32 events in total, we reached 1,250 effective participations.

In the process of designing these events, we collaborated with experienced trainers of the respective fields, and considered and implemented the didactic principles of target group

orientation, topic orientation, participant orientation and applicability of information, following von Hippel et al. (2021), as will be described in more detail below.

The training series on digital adult education encompassed different formats. First, we provided digital lectures to present new information to a large audience, in which we reached an average of 112 participants per lecture. One of these lectures was held by one of the authors and colleagues, the others by experienced trainers of the respective topics. Second, we provided digital workshops for which we limited the number of participants to a maximum of 15 to 20, depending on the topic of the event. The workshop format was chosen because of its potential for achieving multiple goals, such as identifying problems, finding solutions, and promoting innovation, teambuilding, managing conflicts, making decisions, and evaluating processes (Kurtz, 1981; Lipp & Will, 2008). All workshops were conducted by external trainers and accompanied by the research team. Third, we hosted two large events to stimulate knowledge sharing among adult educators: a digital panel discussion ‘on a cup of tea’ and a digital world café. The latter is a conference method developed by Brown and Isaacs (2005), in which participants discuss pre-planned questions in a relaxed café-style atmosphere, change the tables and thus the discussion partners, and write and doodle ideas and insights directly on paper tablecloths. This participatory method allows the sharing of information and experiences, stimulates a cross-pollination of ideas and fosters relationship building (Fouché & Light, 2010). These interactive formats, which were attended by 110 and 84 participants, were conceptualised and moderated by one of the authors, together with both colleagues and external experts, and technically assisted by the other author.

Data base and analysis

We adopted a mixed-methods approach to gather and analyse data by online questionnaires, chat protocols and participant observation.

All participants were asked to complete a standardised, anonymous online questionnaire to assess their digital competence and provide feedback. 678 questionnaires were collected (with 603 stemming from the sessions held between November 2020 and March 2021, and an additional 75 from the conference in July 2021), i.e. the raw response rate is around 54%. One has to consider that the data might be skewed by the fact that some adult educators attended more than one session and were therefore able to complete the questionnaire more than once. Since the amount of feedback per session is proportional to the number of participants, however, the data is not estimated to be influenced by a particularly (un)popular session. All respondents gave explicit consent for their responses to be stored and analysed, in accordance with the European General Data Protection Regulation (GDPR).

The main part of the questionnaire consisted of multiple four-point *Likert* scales, on which the participants should indicate how much they agreed with statements about the respective training session and learning successes. Additionally, we posed questions regarding the process of digitalisation and the ability to cope with digital change, for which we used five-point *Likert* scales. The data was processed and evaluated using the statistics software *R* (R Core Team, 2021) with the extension *RStudio* (RStudio Team, 2022).

Beyond the quantitative data, we collected a range of qualitative data by including open questions in our questionnaire and through participant observation: each session was accompanied by a team member who acted as both technical assistant and observer, taking notes on the challenges, pitfalls and successes of the organising team, the trainers and the participants. As participants made extensive use of the chat function to comment on the learning content and ask questions, we were also able to use these transcripts to record typical experiences. At the beginning of each session, we announced that we will save the chat data, so the participants could opt out of using the chat, and explained how to change display names in the digital meeting software, so that they could use the chat features while remaining anonymous. To process and analyse the qualitative

data, we created data matrices using *Excel* and applied attribute and structural coding methods (Saldaña, 2021) to encode and structure the raw data.

As stated, the participants in this training series were adult educators themselves, offering various types of family support and counselling in Bavaria, Germany. Therefore, they were both participants of digital adult education on the one hand, and experienced providers of digital adult education services on the other. Consequently, we regarded the participating professionals both as learners and recipients, and as experts in their respective fields of parenting education, who can provide profound, specialised knowledge on adult education during times of crisis. According to Bogner and Menz (2001), expert knowledge includes ‘technical knowledge’, i.e. explicit expertise in the narrow sense, which can be directly communicated, ‘process knowledge’, which is based on practical experience, and ‘interpretative knowledge’, which is derived from subjective orientations, rules, viewpoints and interpretations. Thanks to this knowledge, experts can structure the concrete field of action, i.e. adult education, in a meaningful and action-guiding way for others, which gives their assessment a high degree of significance (Bogner et al., 2014; Kaiser, 2014). By adopting a mixed-methods approach gathering quantitative and qualitative data, we made use of all three types of knowledge, and incorporated both the reported and observed experiences of adult educators as learners in the process of digitalisation.

Results

Based on the presented data, we analyse how adult educators did manage to adopt digital methods despite pressing issues and hurdles in regards to the change and which conditions support efficient training of adult educators, in order to ‘nudge’ digitalisation in adult education.

Digital competence and digitalisation hurdles in times of crisis

When faced with the first lockdown, digital communication and digital education were widely considered a promising measure, but in the field of family-related adult education, the digitalisation started slowly. To establish a point of reference for the potential hurdles in regards to digitalisation, we requested the adult educators who participated in our trainings to rate their digital competence before they attended one of the training sessions. On a scale of 5, more than half (57%) of the attendants rated their digital competence at one of the two lowest levels, i.e. as beginners; a third considered themselves to be advanced or at an intermediate level of competence, and only 10% rated their digital competence higher and considered themselves an expert in regards to digital matters. When split by type of institution, the professionals who worked in early intervention, i.e. in municipal offices, tended to self-evaluate as less digitally competent compared to their peers. Given that the kind of jobs performed by these adult educators demands pedagogic, but less digital competence, the low self-confidence regarding digital competence is not surprising. It is, though, not the best starting point for designing and distributing new digital methods.

Consequently, this perceived lack of digital competence is considered the biggest challenge concerning digitalisation: 55% of the attendees classified the digitalisation of services as the biggest hurdle, encompassing both the transition of offline services into digital services including the development of appropriate pedagogic and didactic methods, and the conceptualisation of new digital services. Beyond – or perhaps better: before – these pedagogic and didactic questions, technical issues are rated as the biggest challenges. An astounding 20% of adult educators responded that even the most basic requirement for digital education was not adequately fulfilled: a stable and sufficiently fast internet connection. In addition, 30% of the respondents faced further infrastructural issues, such as a lack of hardware like computers, microphones and cameras. During the events, the team repeatedly observed problems such as both poor internet connections and insufficient or completely lacking hardware. More than a few professionals – including ourselves at the beginning of the pandemic – resorted to using private computers and cameras. Several had to

participate from their home offices because the internet connection was better there than in their actual office. After these infrastructural and hardware issues, half of the professionals named a lack of software licences as the greatest challenge. Simply participating in our training – delivered via *Zoom* in accordance with General Data Protection Regulation – posed problems for some, so that they went home and logged in again from private computers in their home offices. Even if the necessary software is available, about 40% of the attendees claimed a lack of familiarity with its handling as their greatest issue. As the problems of the city administrations were appalling, the engagement in form of quitting the ordinary working place during the trainings sessions and literally running home in order to be able to participate in the trainings from home offices by using private computers, is praiseworthy. Besides these technical and didactic hindrances on the side of the adult education itself, problems are seen on the side of the clients, too: some participants reported that their clients lacked adequate internet connection, hardware, software or familiarity. Finally, but nonetheless important, digital methods have their practical and didactic limits, since, for instance, babies and toddlers simply cannot interactively learn via tablets or computers.

The data suggests no correlation between competence and the availability of adequate hardware or software licences, pointing towards further infrastructural issues. By contrast, there is a relation between self-assessed competence and the amount and kind of perceived hindrances. Unsurprisingly, the professionals who rated themselves as more competent tended to select fewer barriers compared to the professionals with lower competence. Additionally, the professionals with higher competence tended to have fewer issues with the usage of software than those who rank themselves as less competent. By contrast, and at first glance surprisingly, the professionals who rated their digital competence more favourably selected the digitisation of existing services more often as problematic as those professionals who rank themselves less competent. This is probably because before even attempting to digitise services, previous hurdles such as hardware and software availability and usage have to be perceived as feasible, and the necessary knowledge has to be acquired. People who rated themselves as less competent might not even have arrived at the point where the digitisation can become a hurdle.

When evaluating the biggest hindrances by institution, it is noticeable that the professionals who work in early intervention, i.e. in municipal offices, tended to mention more barriers than their peers did. Additionally, they reported to have more issues with the usage of software, whereas the professionals working in family education saw their biggest hurdle in the (more ambitious) digitisation of existing services.

Digital adult education aiming at nudging digital adult education

While technical hurdles can potentially be fixed with better infrastructure and increased funding, hurdles related to digital competence or attitudes can (or rather need to) be overcome with suitable training to provide helpful information and stimulate good practices. To this end, and in order to analyse how to train adult educators efficiently, we conducted and analysed the described training series on digital adult education. As elaborated upon in the methodology chapter, we thereby considered the didactic principles target group orientation, topic orientation, participant orientation and applicability of information. Guided by these principles, we will describe the events in question, illustrate how adult education can put these theoretical principles into practice, and critically discuss how innovative adult education with adult educators can nudge innovative adult education with parents.

Target group orientation

After having decided on our broad target group, adult educators working with families in Bavaria, Germany, as well as the broad topic, i.e. digitalisation, we clearly defined our target group of the planned adult education. We decided to include professionals of all officially recognised facilities of specialised family-related adult education and counselling in Bavaria.

Initially, we invited adult educators offering family education and parenting programmes in family education centres, mother and family centres, and family neighbourhood centres. Since this group was our main target group, all sessions were designed to meet the interests of this particular group. Then, we included adult educators specialising in counselling and teaching in pregnancy counselling centres, partnership and family counselling centres, and in educational counselling. Finally, we included adult educators working in early intervention, i.e. in municipal offices.

We chose this large target group, so many professionals could take part. It is diverse, so that the participating professionals could benefit from their diversity, but also specific enough that the organising team could identify and anticipate the expertise and needs of the participants, as described below, and initiate peer learning processes. Not only are their fields of activity, but also the adult educators' backgrounds varied. However, all were rooted in social work or in education, as well as in related subjects such as psychology, sociology, andragogy, and medicine. The vast majority of adult educators in these fields are female. Professionals of all subgroups showed interest in the offered trainings and followed the invitations. More than half of the participants belonged to the main target group, i.e. the field of classic adult education with parents, about a quarter stemmed from the area of family-related counselling, 13% from the smallest field of early intervention, and the others either worked in related areas or combined different areas. The overall satisfaction with all sessions was high, with no significant differences between groups (89% in family adult education, 95% in counselling, 90% in early intervention and 91% in other) and the participants rated the contents as easily understandable (90 to 96%), with again no significant differences between groups. Thus, the target group could be reached.

Topic orientation

Second, one has to identify the relevant topics for these specific target groups. By combining our expertise on adult education for parents and those of external trainers, we identified the most pressing and useful topics and tailored these to the needs of the target groups.

One focus was on digital adult and family education formats. These sessions mainly addressed professionals in the field of family education and parenting programmes. Guided by an experienced trainer in digital adult education methods and accompanied by a member of our scientific team, the participants became acquainted with both technical and didactic tools. Another focus was on digital counselling. In different sessions, led by an experienced social worker and trainer for psychosocial online counselling, the participants focused on different methods: counselling via video, via email, forum, chat, or messenger. The trainer provided assistance for choosing the appropriate online setting and explained the various forms, possible applications as well as opportunities and limits in contactless counselling. Due to the pandemic, the internet presence of adult education institutions has become especially important. Therefore, we also focused on social media and online fundraising. The trainer, a strategy consultant, explained how educational institutions can use social media platforms such as Facebook and Instagram efficiently and profitably. Furthermore, we offered events on digital ways to reach the specific target groups such as migrants and raised awareness of barriers to access, for instance the loss of drop-in services as a door opener for counselling and support services.

As reported, all sessions were fully booked and the demand exceeded the supply, thereby showing that the chosen topics met the interests of the adult educators. The fact that we engaged very experienced trainers that we briefed precisely on both our aims as well as anticipated needs was successful and the feedback on the speakers very favourable. For example, 93% of professionals were convinced of the speakers' expertise (85% fully, 8% somewhat), and around 100 professionals used the open question in the questionnaire to emphasise that they found the content of the events very informative and easy to understand. One person noted, for example, 'The speaker's knowledge is great. I got a great guideline to get me started'. Others referred explicitly to the respective sessions' topic and noted that the sessions 'made me want to try

online counselling’ or to have gained ‘enthusiasm and ideas for the development of social media for my institution’.

Participant orientation

Third, sessions have to be geared towards the participants by anticipating their varying levels of familiarity with said tools and methods and thus oriented towards either beginners or advanced users, or both, and by using different digital formats and approaches. Thus, we set up a methodologically diverse range of sessions. For the topics mentioned above, we offered lectures to give broad overviews, followed by in-depth workshops in which participants could deepen their knowledge and train their competence, and in which we were responsive to issues brought up by the participants.

Regarding the focus ‘digital adult and family education formats’, we first conducted an introductory lecture with 140 participants to get general information on different video conferencing software opportunities, and then organised eight workshops, which enabled around 160 professionals to strengthen their digital methodological skills. The workshops were conducted multiple times to accommodate a larger number of participants, and lasted about four hours each. The same principle holds true for the sessions around digital counselling as well as on social media and fundraising: following an introductory event with 72 and 90 participants respectively, we offered 11 in-depth workshops on counselling with around 220 professionals, and four workshops on social media and fundraising with around 80 participants.

In order to include the audience in both workshops and lectures, and to show the potential of online tools, we broadly used interactive elements like online whiteboards, pop up questions or short discussions in breakout rooms.

To minimise technical difficulties due to inexperience or user error, we planned for some buffer time before the beginning of the event, in which we welcomed the participants and played some background music while the attendees could familiarise themselves with their hard- and software, i.e. check the equipment and make sure that cameras, speakers and microphones were working. Given our sessions took place in the first year of the pandemic, we started each session with a technical introduction, in which we gave a quick overview over the features of the meeting software (e.g. how to change the screen name and how to switch between different layouts) and the etiquette of video calls (e.g. keeping the microphone muted). In order to make sure the speaker could fully focus on their presentation and interacting with the attendees, at least one member of our research team acted as technical support, giving feedback about volume and pacing, providing technical support to the attendees, and making sure that everyone were muted, which kept the general noise level to a minimum. Further, this assistant watched over the chat messages, and highlighted questions and valuable input. Having one person focused on bundling questions helped making sure, that questions were heard and answered, which in turn helps with understanding and interactivity. During the lectures and workshops, we pinned the videos of everyone currently speaking or participating in a discussion, so that the rest of the participants could focus on them more easily.

This division of roles and responsibilities allowed a more efficient use of the speaker’s time and attention, while also making sure that the attendees could fully focus on understanding the presented information. According to the feedback collected during and after our events, the practitioners appreciated the high standard of organisational and technical preparations, application and performance. For instance, 93% agreed that the trainers conveyed the content of the event in an understandable way (77% fully, 16% somewhat). A point of contention was the group size of the workshops, which we capped at 20: a couple of attendees noted that they would rather have had even smaller groups, to allow them to get more individualised training. However, they also conceded that smaller group sizes could have meant that they might not have been able to

participate at all, since the demand for attendance far outweighed our capacity to accommodate people.

Applicability

Fourth, adult education should strive for applicability. The workshops on education formats, for instance, focused on concrete tools, e.g. voting, virtual backgrounds, subtitling and presentation options, and provided space for directly testing these tools as well as digital whiteboards and notebooks, e.g. *Padlet* and *Miro*, and cooperative writing programmes, e.g. *CryptPad*. In addition, questions about camera position, microphone selection and lighting were clarified and aspects of data protection were addressed. The discourse within the small groups allowed enough time and scope to develop individual ideas for the use of these digital tools in their own adult education processes. In the workshops on counselling, the trainer not only addressed technical aspects, but also the raised data protection concerns and gave an overview of secure tools. In a webinar on challenges and crises in online counselling, professionals presented specific challenges that can arise due to asynchronous and anonymous online counselling and discussed legal aspects, notably the duty of confidentiality and the protection of both those seeking help and the professionals themselves. In the workshops on social media and fundraising, the participants started to develop their individual social media presences, and practicable fundraising strategies respectively.

Since we also moderated events focusing on structured exchange of digital experiences (both failures as well as good practice examples), we stimulated peer learning and, at the same time, acted as role model and provided training on interactive methods for the trainers themselves. The session on how to reach migrants, for instance, was organised as a digital panel discussion ‘on a cup of tea’. Based on a friendly and relaxed atmosphere, we initiated a lively exchange between the invited experts and the 110 participants on how education and counselling can support migrants during the crisis and recorded good practice experiences on an interactive digital whiteboard, which was made available to all participants. Furthermore, we translated the conference method world café into the digital space: at virtual tables, 84 participants gathered in small groups to discuss given questions on digital education and to record recommendations on virtual notes. In the course of the sessions, the participants praised the applicability and highlighted the usefulness of the training series. 89% stated that the content of the event gave them concrete ideas for their own work (60% fully, 29% somewhat), and about 180 professionals used the open questions to explicitly praise the practical orientation and the concrete examples, e.g. by emphasising the ‘relaxed learning of technical information, lots of practical tips, time for interactive tests’.

Regarding technical preparations and implementation, the practitioners valued the speakers’ professional technical equipment, such as high quality cameras, dedicated light sources, quality microphones and the expertise to use the full functionality and features of the conference software. By showing the difference achieved by using professional equipment and presentation techniques, the speakers were able to act as role models for the attendees and sparked an interest in upgrading their own digital events, be it to equipment, their presentation methods or both. In the planning of a digital world café, some pitfalls have to be considered. As we could see, when 84 participants access an online whiteboard at the same time, this initially means a lot of hustle and bustle – the right group table first has to be found and the functionality of the digital tools has to be understood. For some participants, this was too much and they felt overburdened. Some contacted the technical support team during the event via chat, mail or phone. More often than during any other session, participants claimed to have ‘had technical issues during the meeting’ (31%). These challenges notwithstanding, the participants improved rapidly and by the second round of the world café they already proved that an inspiring and uncomplicated exchange can also take place digitally. After the conclusion of the session, multiple participants praised the opportunity to exchange knowledge with their peers and all the ideas and methods they could gather.

In total, 91% agreed that they ‘got motivated to further learn about the topic’ and 89% that they ‘got (practical) inspirations for my work’. One participant stated, ‘The speaker’s technical expertise

was enormous and he was a great role model. On the technical side, I can learn a lot from him', which should not only be read as praise for the trainer, but can also be interpreted as interest in improving their own digital competence. Another one explicitly explained that the sessions can help to enhance the digitalisation in family-oriented adult education: 'I am very grateful that I was able to take part in your free events. With the knowledge I gained, I was able to better advocate for the expansion of our own online services'. While one reflected, 'I like the idea of distributing crafting kits and then meeting online to build them together. Thinking about doing the same', another admitted, 'I was sceptical. I thought families wouldn't be receptive to digital methods. Thanks to your trainings, I can imagine that it works. I am excited to try it'. One participant wrote that after attending the sessions, they 'had the feeling that digital is possible' while another participant felt empowered to use the learning from the events to 'overcome the fears of [their] bosses and [...] team'. These examples indicate that nudging interventions, especially high-touch nudges, can be utilised to empower learners to reach their goals and promote further learning.

Conclusion

With this paper, we aim to elucidate the transition of adult education from traditional offline settings to an online environment and analyse adult educators' experiences with digitalisation in the specific field of family-related adult education. Adult education on family-related issues plays an important individual and societal role since it aims at preventing family-related problems before they arise and tackle them before situations deteriorate and thus at protecting the well-being of children. When faced with the first lockdown, typical methods could not be implemented any more, and alternative ways had to be explored. While digital communication and digital education were widely considered a promising measure, this was different in the field of family-related adult education, especially with parents of babies and toddlers, where these measures were considered inappropriate (Lüken-Klassen et al., 2020).

In order to promote digital adult education for parents in times of crisis, and to obtain valid, in-depth information about this process, we have designed and implemented digital trainings. In sum, we organised 32 events in which we reached 1,250 participations, and adopted a mixed-methods approach to get qualitative and quantitative data on how to 'nudge' digitalisation in adult education. Relying on these experiences and data, this paper examines (1) how adult educators managed to adopt digital methods despite pressing issues and hurdles in regards to the change, and (2) which conditions support efficient training of adult educators, aiming at 'nudging' digitalisation in adult education for families.

Our findings reveal that various barriers hinder the process of digitalisation in many places: a lack of technical infrastructure, of familiarity with digital didactic tools and methods, and of positive attitudes, to name the most important. At the same time, however, the data and experiences gathered in our project show an impressive interest in digitalisation and a powerful motivation to implement digital services. Despite the challenges imposed by the pandemic, many adult educators proved resilient to initial setbacks and showed creativity and resourcefulness to continue to provide high quality digital adult education. This includes both the transformation of offline services into digital services and the conceptualisation of new digital services, which embrace potential opportunities afforded by digitalisation. However, according to our data, there is a great need for both better technical infrastructure and further training to strengthen adult educators' digital attitudes and skills. In the field of adult education with families, this includes the unconditional and definite need to develop specific digital formats for education and counselling and to adapt methodological and didactic concepts for these in order to reach different target groups – including those difficult to reach – and thus to be able to adequately support families.

To support the practitioners in managing this task, adult educators can be 'nudged' towards a change in attitude towards digitalisation and efficiently be supported in gaining digitalisation competence. Nudging tends to be most effective when it is used to overcome

behavioural barriers that consist of latent cognitive boundaries and when used to achieve goals, that are congruent with a person's self-proclaimed goal. For parenting education, cognitive barriers might be a lack of confidence in digital methods or in their own digital competence, and the self-proclaimed goals might be to continue to meet the needs of their clients. Therefore, it is advisable to demonstrate the potential of digital methods, thereby applying didactic principles such as target group orientation, topic orientation, participant orientation and applicability of information, and ensuring a high standard of technical and organisational preparation.

Through this, many participating adult educators were nudged into realising and then praising the potential for adult education with parents. Furthermore, many educators positively re-assessed their own digital competence after receiving support and instruction, causing them to believe in their ability to implement digital methods. This attitude change motivated them to seek additional learning resources and training in digital methods. To conclude, acting as role models by offering digital trainings can lead to an increase in motivation to engage with digital methods in adult education and thus 'nudge' digitalisation.

These findings indicating the potential of nudging in adult education could be used as a basis for further research. While this paper analyses the self-assessed digital competence and attitudes of adult educators prior to and directly after digital trainings, follow-up studies are needed to determine whether nudges result in lasting changes in adult educators' self-assessed competence or dispositions and whether this lead to (more) digital formats in adult education. By doing so, further research could enable a more robust understanding of the potential of nudging methods in adult education.

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